- Implementability
- Consideration of public concerns

The following table compares each of the alternatives against the MTCA threshold requirements and evaluation criteria. Note that the consideration-of-public-concerns criterion is only listed once. A weighting factor has been assigned to each of the MTCA criteria, based on an assessment of relative importance. Each of the alternatives has also been given a ranking of between 1 and 10. The higher the ranking, the better the alternative meets that criterion.

A preliminary order-of-magnitude cost estimate is provided for each of the alternatives. The estimates are "educated guesses" and should be considered accurate to within + or – 50%. A more accurate engineering estimate will be developed as part of preparing final plans and specifications.

TABLE 3.5-1
DETAILED EVALUATION OF ALTERNATIVES

Alternative No.		Alt. 1	Alt. 2	Alt. 3	Alt. 4
Description		**Complete soil excavation**, off-site disposal facility, ground water treatment, **Store moved**	**Complete soil excavation**, solid phase soil treatment, local area soil disposal, ground water treatment **store moved**	**Partial soil excavation**, off-site disposal, ground water treatment, **store not moved**	**Partial soil excavation**, Alt. 3 plus soil vapor venting, **store not moved**
Soil Volume Excavated (yds^3)		2,100	2,100	1,825	1,825
Estimated Cost		$1,197,140	$1,083,852	$1,053,448	$1,065,348
Threshold MTCA Criteria					
Protect Human Health and Environment		**Yes** All contamination above CULs eventually removed	**Yes** All contamination above CULs eventually removed	**Yes** All contamination above CULs eventually removed	**Yes** All contamination above CULs eventually removed
Compliance with Cleanup Standards		**Yes** All contamination above CULs eventually removed	**Yes** All contamination above CULs eventually removed	**Yes** All contamination above CULs eventually removed	**Yes** All contamination above CULs eventually removed
Compliance with Applicable State and Federal Laws		**Yes** Alternative complies with state and federal laws	**Yes** Alternative complies with state and federal laws	**Yes** Alternative complies with state and federal laws	**Yes** Alternative complies with state and federal laws
Provision for Compliance Monitoring		**Yes** Compliance monitoring during excavation and following ground water treatment	**Yes** Compliance monitoring during excavation and following ground water treatment	**Yes** Compliance monitoring during excavation and following ground water treatment	**Yes** Compliance monitoring during excavation and following ground water treatment

Reasonable Restoration Time Frame		**Yes** Restoration time frame is 1 to 2 years for soil remediation and ground water treatment, plus 2 years for ground water monitoring	**Yes** Restoration time frame is 1 to 2 years for soil remediation and ground water treatment, plus 2 years for ground water monitoring	**Yes** Restoration time frame is 2 to 3 years for soil remediation and ground water treatment, plus 2 years for ground water monitoring	**Yes** Restoration time frame is 2 to 3 years for soil remediation and ground water treatment, plus 2 years for ground water monitoring
Evaluation Criteria					
	Weight	**Alt. 1**	**Alt. 2**	**Alt. 3**	**Alt. 4**
Overall Protectiveness	20 %	**10** **Protective** All media achieve cleanup levels	**10** **Protective** All media achieve cleanup levels	**10** **Protective** All media achieve cleanup levels	**10** **Protective** All media achieve cleanup levels
Permanence	20 %	**10** **Permanent** All media achieve cleanup levels	**10** **Permanent** All media achieve cleanup levels	**10** **Permanent** All media achieve cleanup levels	**10** **Permanent** All media achieve cleanup levels
Long-Term Effectiveness	20 %	**10** **Permanent** All media achieve cleanup levels	**10** **Permanent** All media achieve cleanup levels	**10** **Permanent** All media achieve cleanup levels	**10** **Permanent** All media achieve cleanup levels
Short-Term Risk Management	15 %	**8** Potential safety risk doing in-street excavation	**6** Potential safety risk doing in-street excavation. Contaminated soil held on adjoining property for period of time.	**4** Potential safety risk doing in-street excavation. Not all contaminated soil removed. Vapor threat not addressed.	**6** Potential safety risk doing in-street excavation. Not all contaminated soil removed
Implementability	20 %	**4** Extra difficulty moving store. Traffic control for in-street work	**3** Extra difficulty moving store. Land for soil treatment and disposal may not be available. Traffic control for in-street work	**7** No need to move store, but underpinning may be necessary for structural stability. Traffic control for in-street work	**6** No need to move store, but underpinning may be needed. Added difficulty installing vent piping beneath store. Traffic control for in-street work
Public Concerns	5 %	**4** Store closed for period of time. Traffic delays during construction. Foundation support for store.	**2** Store closed for period of time. Beach parking used for soil treatment. Re-use of treated soil as fill in the Hansville area. Traffic delays during construction. Foundation support for store.	**8** Traffic delays during construction. Structural stability of the store	**8** Traffic delays during construction. Structural stability of the store
RELATIVE BENEFITS SCORE*		**8.2**	**7.6**	**8.4**	**8.5**

*sum of weighting x ranking for each evaluation criterion for each alternative

3.6 SELECTION OF PREFERRED ALTERNATIVE

All of the alternatives represent permanent cleanup actions and are essentially equivalent in terms of environmental protection. Variations between the alternatives occur primarily in cost, construction considerations, and impact on the general store. The relative benefits of the alternatives are close, but the partial excavation alternatives appear to have the edge in both benefit and cost. This is shown on Figure 13, which provides a graph of benefit versus cost.

Ecology is selecting Alternative 4 because it is only slightly more costly than Alternative 3 and addresses soil vapor risk immediately rather than at some point in the future. Under Alternative 4, the store building would not need to be moved, the majority of soil contamination would be removed, soil vapor beneath the building would be addressed, and residual ground water contamination would be cleaned up beneath the building and outside the area of soil contamination. Contaminated soil at and below the water beneath the building would also be cleaned up. Confirmation sampling and compliance monitoring would document final cleanup.

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FIGURES

FIGURES